

**Steadman, David**

---

**From:** Steadman, David  
**Sent:** Friday, April 20, 2007 8:12 AM  
**To:** Chan, Christina  
**Subject:** RUSH 09/529,043 sequence search request

Ms. Chan,

An after final amendment has been filed in this application. I would like to request the RUSH sequence search noted below. SEQ ID NO:2 is 1140 amino acids. Thank you very much.

David Steadman

NAME: David Steadman  
AU: 1656  
Date: 4/20/07  
Office: Remsen 2D11  
Mailbox: Remsen 3C70

**Please search the following sequences in commercial databases:**

Standard search of SEQ ID NO:2 against nucleic acid databases.

Thank you very much.

David

David J. Steadman, Ph.D.  
Primary Examiner  
Art Unit 1656  
Protein Crystallography and Recombinant Enzymes  
Office: Remsen 2B05  
Mailbox: Remsen 3C70  
Phone: (571) 272-0942

Search History for 09/529,043

(FILE 'HOME' ENTERED AT 07:03:39 ON 20 APR 2007)

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE, AQUASCI, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CAPLUS, CEABA-VTB, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB, DRUGMONOG2, DRUGU, EMBAL, EMBASE, ...' ENTERED AT 07:04:03 ON 20 APR 2007

SEA PVWEX1PYC

-----  
2 FILE BIOTECHABS

2 FILE BIOTECHDS

1 FILE CAPLUS

2 FILE WPIDS

2 FILE WPINDEX

L1

QUE PVWEX1PYC  
-----

FILE 'BIOTECHDS, CAPLUS, WPIDS' ENTERED AT 07:05:09 ON 20 APR 2007

L2

5 S PVWEX1PYC

L3

2 DUP REM L2 (3 DUPLICATES REMOVED)

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE, AQUASCI, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CAPLUS, CEABA-VTB, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB, DRUGMONOG2, DRUGU, EMBAL, EMBASE, ...' ENTERED AT 07:55:45 ON 20 APR 2007

SEA "DSM 12893" OR DSM12893 OR DSM-12893

-----  
0\* FILE BIOTECHABS

SEA "DSM 12893" OR DSM-12893 OR DSM12893  
-----

0\* FILE BIOTECHABS

FILE 'BIOTECHDS, CAPLUS, WPIDS, MEDLINE, AGRICOLA, BIOSIS, EMBASE' ENTERED AT 08:15:38 ON 20 APR 2007

L4

1 S "DSM 12893" OR DSM-12893 OR DSM12893

Search History for 09/529,043

(FILE 'HOME' ENTERED AT 10:25:27 ON 20 APR 2007)

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE, AQUASCI, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CAPLUS, CEABA-VTB, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB, DRUGMONOG2, DRUGU, EMBAL, EMBASE, ...' ENTERED AT 10:25:47 ON 20 APR 2007  
SEA PVWEX1

-----  
1 FILE BIOTECHABS  
1 FILE BIOTECHDS  
1 FILE IFIPAT  
3 FILE USPATFULL  
1 FILE USPAT2  
2 FILE WPIDS  
2 FILE WPINDEX  
L1 QUE PVWEX1  
-----

FILE 'BIOTECHDS, IFIPAT, USPATFULL, USPAT2, WPIDS' ENTERED AT 10:27:36 ON 20 APR 2007

L2 8 S PVWEX1  
L3 5 DUP REM L2 (3 DUPLICATES REMOVED)

=>

[Sign in](#)

Google

[Web](#) [Images](#) [Video](#) [News](#) [Maps](#) [more »](#)

pvwex1

Search

[Advanced Search](#)  
[Preferences](#)**Web**Results **1 - 10** of about **8** for **pvwex1**. (0.26 seconds)

### The DeoR-Type Regulator SugR Represses Expression of ptsG in ...

The cultures of *C. glutamicum* WT(**pVWEx1**) and WT(**pVWEx1-sugR**) were induced 3 ...

In contrast to the empty vector control strain *C. glutamicum* WT(**pVWEx1**), ...

[jb.asm.org/cgi/content/full/189/8/2955](http://jb.asm.org/cgi/content/full/189/8/2955) - [Similar pages](#)

#### [PDF] The DeoR-Type Regulator SugR Represses Expression of ptsG in ...

File Format: PDF/Adobe Acrobat

**pVWEx1** with an 807-bp fragment of the *sugR* gene and an artificial ribosome. binding site ... acetate, WT as well as WT(**pVWEx1**) simultaneously utilized ...

[jb.asm.org/cgi/reprint/189/8/2955.pdf](http://jb.asm.org/cgi/reprint/189/8/2955.pdf) - [Similar pages](#)

[ [More results from jb.asm.org](#) ]

### [PDF] S 5 (D 5): P C 23.6 PLASMID VECTORS FOR CORYNEBACTERIUM GLUTAMICUM

File Format: PDF/Adobe Acrobat - [View as HTML](#)

**pVWEx1**. pHM1519. Km. 15-25. Km. 50. P. tac. ,. lacI. q. ;. Km. resistance. gene. from. pEKEx2. 8900. Bam. HI., Pst. I., Xba. I., Sal. I. medium. —. 39 ...

[www.fz-juelich.de/ibt/datapool/general/handbook-c-glutamicum-chapter-23-6.pdf](http://www.fz-juelich.de/ibt/datapool/general/handbook-c-glutamicum-chapter-23-6.pdf) -

[Similar pages](#)

### [PDF] Biochemical and genetic characterization of the membrane ...

File Format: PDF/Adobe Acrobat

in the vectors pJC1 and **pVWEx1** [21 23]. A subclone, pRM18, . gel TLC plate (RP-8

F254, Merck). ... pRM18 and ligated into the expression vector **pVWEx1** [23]. ...

[www.blackwell-synergy.com/doi/pdf/10.1046/j.1432-1327.1998.2540395.x](http://www.blackwell-synergy.com/doi/pdf/10.1046/j.1432-1327.1998.2540395.x) - [Similar pages](#)

### Nucleotide sequences coding for proteins involved in the ...

The *serB* gene was cloned into the **pVWEX1** vector and the *serC* gene was cloned into the **pVWEX2** ... The plasmids **pVWEX1-serB** and **pVWEX2-serC** were introduced, ...

[www.freepatentsonline.com/7083952.html](http://www.freepatentsonline.com/7083952.html) - 116k - [Cached](#) - [Similar pages](#)

### Process for the fermentative preparation of L-amino acids using ... [ [Translate this page](#) ]

[0055] Als Basisvektor zur Expression sowohl in *C. glutamicum* als auch in *E. coli* wird der *E. coli* - *C. glutamicum* - Shuttle - Expressionsvektor **pVWEx1** ...

[www.freepatentsonline.com/EP1538213.html](http://www.freepatentsonline.com/EP1538213.html) - 68k - [Cached](#) - [Similar pages](#)

[ [More results from www.freepatentsonline.com](#) ]

**[PDF] Globale Expressionsanalysen zur Charakterisierung der Lysin ...**

File Format: PDF/Adobe Acrobat

Im Wildtyp bewirkte weder die Genexpression von Plasmiden **pVWEX1** -2150 ... Im Stamm MH20-22B hatte die Genexpression von den Plasmiden **pVWEX1**- ...

juwel.fz-juelich.de:8080/dspace122fzj/bitstream/2128/98/1/Juel\_4092\_Sindelar.pdf -

Similar pages

**[PDF] Regulation der Zuckerverwertung in Corynebacterium glutamicum**

File Format: PDF/Adobe Acrobat

Vektor **pVWEx1** kloniert. Das so konstruierte Plasmid **pVWEx1-malE** wurde in den ... zunächst die Enzymaktivität von MalE in den Stämmen DM1730(**pVWEx1-malE**) und ...

deposit.ddb.de/cgi-bin/dokserv?idn=980897343&

dok\_var=d1&dok\_ext=pdf&filename=980897343.pdf - Similar pages

**[PDF] Untersuchungen zur Glykolyse und zum L-Serin-Stoffwechsel in ...**

File Format: PDF/Adobe Acrobat

**pVWEx1** mit 1,4 kb PCR-. Fragment, welches sdaA mit einer ... **pVWEx1** kloniert, wodurch das Plasmid **pVWEx1\_sdaA\_strepC** erhalten wurde. ...

deposit.ddb.de/cgi-bin/dokserv?idn=971436797&

dok\_var=d1&dok\_ext=pdf&filename=971436797.pdf - Similar pages

**[PDF] Phosphate Starvation-Inducible Gene ushA Encodes a 5 Nucleotidase ...**

File Format: PDF/Adobe Acrobat

using supernatants from C. glutamicum WT(**pVWEx1-ushA**). Substrates were tested at a concentration of 5 mM. Similar results were obtained at a substrate ...

aem.asm.org/cgi/reprint/71/8/4339.pdf - Similar pages

Result Page: 1 2 **Next**

Try Google Desktop: search your computer as easily as you search the web.

---

---

[Search within results](#) | [Language Tools](#) | [Search Tips](#) | [Dissatisfied? Help us improve](#)

---

[Google Home](#) - [Advertising Programs](#) - [Business Solutions](#) - [About Google](#)

©2007 Google

[Sign in](#)

Google

[Web](#) [Images](#) [Video](#) [News](#) [Maps](#) [more »](#)

pvwex1

Search

[Advanced Search](#)  
[Preferences](#)**Web**Results **11 - 15** of about **8** for **pvwex1**. (0.09 seconds)**Nucleotide sequences coding for proteins involved in the ...**

... L-serine in the culture supernatant of *Corynebacterium glutamicum* wild type ATCC 13032 and of the *Corynebacterium glutamicum* strains ATCC 13032(**pVWEX1**), ...  
[www.patentgenius.com/patent/7083952.html](http://www.patentgenius.com/patent/7083952.html) - 120k - Supplemental Result -  
[Cached](#) - [Similar pages](#)

**Method for the microbial production of aromatic amino acids and ...**

DELTA.ppc Plasmids **pVWEX1**- pyc gene sequence Peters-Wendisch et al. pyc Kanamycin resistance J. Mol. Microbiol. Biotechnol. 3 (2001) 295-300 PACYCPtac ...  
[www.freshpatents.com/Method-for-the-microbial-production-of-aromatic-amino-acids-and-other-metabolites-of...](http://www.freshpatents.com/Method-for-the-microbial-production-of-aromatic-amino-acids-and-other-metabolites-of...) - 63k - Supplemental Result - [Cached](#) - [Similar pages](#)

**[PDF] Untersuchungen zur Glykolyse und zum L-Serin-Stoffwechsel in ...**

File Format: PDF/Adobe Acrobat  
pVWEX1 sdaA-strepC KanR; **pVWEX1** mit 1,4 kb PCR-. diese Arbeit ... der Plasmide pVWEX1 sdaA\_hisC und **pVWEX1** sdaA strepC wieder in der Lage ...  
[juwel.fz-juelich.de:8080/dspace122fzj/bitstream/2128/104/1/Juel\\_4130\\_Netzer.pdf](http://juwel.fz-juelich.de:8080/dspace122fzj/bitstream/2128/104/1/Juel_4130_Netzer.pdf) -  
[Similar pages](#)

**[PDF] Charakterisierung des Pyruvatdehydrogenase- Komplexes aus ...**

File Format: PDF/Adobe Acrobat - [View as HTML](#)  
Carboxylase-Gens (**pVWEX1**-pyc), des PEP-Carboxykinase-Gens (pEK0-pck), des. Pyruvat-Chinon-Oxidoreduktase-Gens (PXT-poxB-Ex) und des Lipoamid- ...  
[vts.uni-ulm.de/docs/2004/4522/vts\\_4522.pdf](http://vts.uni-ulm.de/docs/2004/4522/vts_4522.pdf) - [Similar pages](#)

**[lehd-general] Re: LED Applications**

...  
DxT7pLC49c3ah/**PVwex1**/IWbW3cCRFWBmTIN+YkhDuZNdeDNb64uJ20VXaHXLeQd87n2aq  
[lists.census.gov/pipermail/lehd-general/2006-September/000013.html](http://lists.census.gov/pipermail/lehd-general/2006-September/000013.html) - [Similar pages](#)

*In order to show you the most relevant results, we have omitted some entries very similar to the 15 already displayed.*

*If you like, you can repeat the search with the omitted results included.*

Result Page: [Previous](#) [1](#) [2](#)

---

pvwex1

Search

[Search within results](#) | [Language Tools](#) | [Search Tips](#)

---

[Google Home](#) - [Advertising Programs](#) - [Business Solutions](#) - [About Google](#)

©2007 Google



A service of the National Library of Medicine  
and the National Institutes of Health

My NCBI  
[Sign In]

All Databases

PubMed

Nucleotide

Protein

Genome

Structure

OMIM

PMC

Journals

Search MeSH

for pwwex1

Go

Clear

Save

Limits

Preview/Index

History

Clipboard

Details

The following term was not found: pwwex1.

See [Details](#). No items found.

Suggestions: [Pvr11](#); [Pvp16p](#); [Pvbgl](#); [Pv ox](#); [Pvp i](#); [Pvas](#); [Pvla](#); [Pvap](#); [Pvma](#); [Pvda](#); [more...](#)

About Entrez

Text Version

### Entrez PubMed

Overview

Help | FAQ

Tutorials

New/Noteworthy

E-Utilities

### PubMed Services

Journals Database

MeSH Database

Single Citation

Matcher

Batch Citation

Matcher

Clinical Queries

Special Queries

LinkOut

My NCBI

### Related

Resources

Order Documents

NLM Mobile

NLM Catalog

NLM Gateway

TOXNET

Consumer Health

Clinical Alerts

ClinicalTrials.gov

PubMed Central

[Write to the Help Desk](#)

[NCBI](#) | [NLM](#) | [NIH](#)

[Department of Health & Human Services](#)

[Privacy Statement](#) | [Freedom of Information Act](#) | [Disclaimer](#)

Apr 4 2007 12:47:27

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	0	pvwex1pyc	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/04/20 08:40
S2	0	dsm adj "12893"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/04/20 06:50
S3	1444	"pyruvate carboxylase" OR "pyruvat carboxylase"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/04/20 06:51
S4	52	S3 and (eikmanns.in. OR peters-wendisch.in. OR sahm.in.)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/04/20 06:52
S5	5179	S3 or FORSCHUNGSZENTRUM.as.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/04/20 06:53
S6	20	S3 AND FORSCHUNGSZENTRUM.as.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/04/20 07:00
S7	14	"19831609"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/04/20 07:22
S8	11	sinsky.in. AND "pyruvate carboxylase"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/04/20 07:22
S9	0	dsm-12893 OR dsm12893	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/04/20 08:01
S10	47	dg52-5 OR dg52-5/pvwex1pyc	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/04/20 08:41
S11	47	S10 and ("pyruvate carboxylase" OR "pyruvat carboxylase")	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/04/20 09:25

## EAST Search History

S12	4	pwex1	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2007/04/20 09:25
-----	---	-------	---	----	-----	------------------

[Sign in](#)

[Google](#)

**Web** [Images](#) [Video](#) [News](#) [Maps](#) [more »](#)

"dsm 12893" OR dsm12893 OR dsm-12893

[Advanced Search](#)  
[Preferences](#)

---

## Web

Tip: Try removing quotes from your search to get more results.

Your search - **"dsm 12893" OR dsm12893 OR dsm-12893** - did not match any documents.

Suggestions:

- Make sure all words are spelled correctly.
- Try different keywords.
- Try more general keywords.
- Try fewer keywords.

---

[Google Home](#) - [Advertising Programs](#) - [Business Solutions](#) - [About Google](#)

©2007 Google

[Sign in](#)[Google](#)[Web](#) [Images](#) [Video](#) [News](#) [Maps](#) [more »](#)

pvwex1pyc

[Advanced Search](#)  
[Preferences](#)

---

## Web

Your search - **pvwex1pyc** - did not match any documents.

Suggestions:

- Make sure all words are spelled correctly.
- Try different keywords.
- Try more general keywords.

---

[Google Home](#) - [Advertising Programs](#) - [Business Solutions](#) - [About Google](#)

©2007 Google



A service of the National Library of Medicine  
and the National Institutes of Health

My NCBI  
[Sign In]

All Databases

PubMed

Nucleotide

Protein

Genome

Structure

OMIM

PMC

Journals

Search MeSH

☐ for "dsm 12893" OR dsm12893 OR dsm-12893

Limits

Preview/Index

History

Clipboard

Details

About Entrez

Text Version

Entrez PubMed

Overview

Help | FAQ

Tutorials

New/Noteworthy

E-Utilities

PubMed Services

Journals Database

MeSH Database

Single Citation

Matcher

Batch Citation

Matcher

Clinical Queries

Special Queries

LinkOut

My NCBI

Related

Resources

Order Documents

NLM Mobile

NLM Catalog

NLM Gateway

TOXNET

Consumer Health

Clinical Alerts

ClinicalTrials.gov

PubMed Central

The following terms were not found: 12893, dsm12893, dsm-12893.

Quoted phrase not found.

See Details.

Suggestions: [6 dsmb oxymorphone](#); [Cephalosporin 112883](#); [6 dsmb naltrexone](#); [Antibiotic sf 1293](#); [Dsred protein 583](#); [Prolactin, arg 129](#); [Gene product, dsba](#); [Dsd proteoglycan](#); [Gene product, dsbd](#); [Gene product, dsbc](#); [more...](#)

Display Summary

☐ Show 20 ☐ Send to

All: 31

Items 1 - 20 of 31

Page 1 of 2 N

☐ **1: [Diagnostic and Statistical Manual of Mental Disorders](#)**

Categorical classification of MENTAL DISORDERS based on criteria sets with defining features. It is produced by the American Psychiatric Association. (DSM-IV, page xxii)

Year introduced: 2003

☐ **2: [n-toluenesulfonate-4-\(n-dimethylaminostyrene\)-1-methylpyridinium](#) [Substance Name]**

Date introduced: April 25, 2005

☐ **3: [amycin B](#) [Substance Name]**

from Streptomyces sp DSM 3816; structure given in first source

Date introduced: September 7, 1990

☐ **4: [amycin A](#) [Substance Name]**

from Streptomyces sp DSM 3816; structure given in first source

Date introduced: September 7, 1990

☐ **5: [staphyloferrin A](#) [Substance Name]**

from Staphylococcus hyicus DSM 20459; structure given in first source; has siderophore activity

Date introduced: May 30, 1990

☐ **6: [Asperger Syndrome](#)**

A childhood disorder predominately affecting boys and similar to



A service of the National Library of Medicine  
and the National Institutes of Health

My NCBI  
[Sign In]

[All Databases](#)[PubMed](#)[Nucleotide](#)[Protein](#)[Genome](#)[Structure](#)[OMIM](#)[PMC](#)[Journals](#)[Search MeSH](#)[Limits](#)[Preview/Index](#)[History](#)[Clipboard](#)[Details](#)

The following term was not found: pvwex1pyc.

See [Details](#). No items found.

Suggestions: [Pvc pvac](#); [Pv phen](#); [Pvs cpd](#); [Pan pvc](#); [Pv pic](#); [Pvs 4.4](#); [Pea pvk](#); [Pvs acid](#); [Pv lac](#); [Pva ha](#); [more...](#)

[About Entrez](#)[Text Version](#)

### Entrez PubMed

[Overview](#)[Help | FAQ](#)[Tutorials](#)[New/Noteworthy](#) [E-Utilities](#)

### PubMed Services

[Journals Database](#)[MeSH Database](#)[Single Citation](#)[Matcher](#)[Batch Citation](#)[Matcher](#)[Clinical Queries](#)[Special Queries](#)[LinkOut](#)[My NCBI](#)

### Related

[Resources](#)[Order Documents](#)[NLM Mobile](#)[NLM Catalog](#)[NLM Gateway](#)[TOXNET](#)[Consumer Health](#)[Clinical Alerts](#)[ClinicalTrials.gov](#)[PubMed Central](#)[Write to the Help Desk](#)[NCBI | NLM | NIH](#)[Department of Health & Human Services](#)[Privacy Statement](#) | [Freedom of Information Act](#) | [Disclaimer](#)

Apr 4 2007 12:47:27



A service of the National Library of Medicine  
and the National Institutes of Health

**My NCBI**  
[Sign In] [Re

All Databases

PubMed

Nucleotide

Protein

Genome

Structure

OMIM

PMC

Journals

Search PubMed

☐ for

Preview

Go

Limits

Preview/Index

**History**

Clipboard

Details

About Entrez

Text Version

Entrez PubMed

Overview

Help | FAQ

Tutorials

New/Noteworthy

E-Utilities

PubMed Services

Journals Database

MeSH Database

Single Citation

Matcher

Batch Citation

Matcher

Clinical Queries

Special Queries

LinkOut

My NCBI

- Search History will be lost after eight hours of inactivity.
- Search numbers may not be continuous; all searches are represented.
- To save search indefinitely, click query # and select Save in My NCBI.
- To combine searches use #search, e.g., #2 AND #3 or click query # for more options.

## Search

## Most Recent Queries

## Time Result

#7 Search <b>pvwex1pyc</b>	06:57:32	<u>0</u>
#6 Search <b>glutamate and pathway and family and "amino acid"</b>	05:41:49	<u>91</u>
#5 Search <b>glutamate and family and "amino acid"</b>	05:41:15	<u>1275</u>
#3 Search <b>"glutamate family"</b>	05:40:03	<u>21</u>
#1 Search <b>"aspartate family" OR "glutamate family"</b>	05:37:15	<u>73</u>

Clear History

Related

Resources

Order Documents

NLM Mobile

NLM Catalog

NLM Gateway

TOXNET

Consumer Health

Clinical Alerts

ClinicalTrials.gov

PubMed Central

[Write to the Help Desk](#)

[NCBI](#) | [NLM](#) | [NIH](#)

[Department of Health & Human Services](#)

[Privacy Statement](#) | [Freedom of Information Act](#) | [Disclaimer](#)

Apr 4 2007 12:47:27



A service of the National Library of Medicine  
and the National Institutes of Health

My NCBI  
[Sign In]

[All Databases](#)[PubMed](#)[Nucleotide](#)[Protein](#)[Genome](#)[Structure](#)[OMIM](#)[PMC](#)[Journals](#)

Search

PubMed



for "dsm 12893" OR dsm12893 OR dsm-12893

Go

Clear

Save

[Limits](#)[Preview/Index](#)[History](#)[Clipboard](#)[Details](#)

The following terms were not found: dsm12893, dsm-12893.

Quoted phrase not found.

See [Details](#). No items found.

[About Entrez](#)[Text Version](#)

## Entrez PubMed

[Overview](#)[Help | FAQ](#)[Tutorials](#)[New/Noteworthy](#) [E-Utilities](#)

## PubMed Services

[Journals Database](#)[MeSH Database](#)[Single Citation](#)[Matcher](#)[Batch Citation](#)[Matcher](#)[Clinical Queries](#)[Special Queries](#)[LinkOut](#)[My NCBI](#)

## Related

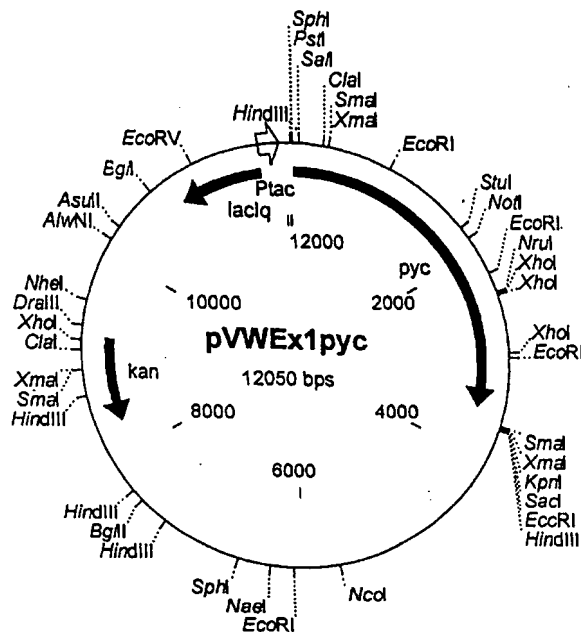
[Resources](#)[Order Documents](#)[NLM Mobile](#)[NLM Catalog](#)[NLM Gateway](#)[TOXNET](#)[Consumer Health](#)[Clinical Alerts](#)[ClinicalTrials.gov](#)[PubMed Central](#)[Write to the Help Desk](#)[NCBI](#) | [NLM](#) | [NIH](#)[Department of Health & Human Services](#)[Privacy Statement](#) | [Freedom of Information Act](#) | [Disclaimer](#)

Apr 4 2007 12:47:27



<p>(51) Internationale Patentklassifikation <sup>6</sup> :  <b>C12P 13/20, C12N 15/60 // (C12P 13/20, C12R 1:15)</b></p>	<p><b>A3</b></p>	<p>(11) Internationale Veröffentlichungsnummer: <b>WO-99/18228</b></p> <p>(43) Internationales Veröffentlichungsdatum: 15. April 1999 (15.04.99)</p>						
<p>(21) Internationales Aktenzeichen: <b>PCT/EP98/06210</b></p> <p>(22) Internationales Anmeldedatum: 30. September 1998 (30.09.98)</p> <p>(30) Prioritätsdaten:</p> <table border="0"> <tr> <td>197 43 894.6</td> <td>4. Oktober 1997 (04.10.97)</td> <td>DE</td> </tr> <tr> <td>198 31 609.7</td> <td>14. Juli 1998 (14.07.98)</td> <td>DE</td> </tr> </table> <p>(71) Anmelder (für alle Bestimmungsstaaten ausser US):          FORSCHUNGSZENTRUM JÜLICH GMBH [DE/DE];          Postfach 1913, D-52425 Jülich (DE).</p> <p>(72) Erfinder; und</p> <p>(75) Erfinder/Anmelder (nur für US): EIKMANN, Bernd [DE/DE]; Gleißelstetten 49, D-89081 Ulm (DE). PETERS-WENDISCH, Petra [DE/DE]; Steinenkamp 1, D-51496 Bergisch-Gladbach (DE). SAHM, Hermann [DE/DE]; Wendelinusstrasse 71, D-52428 Jülich (DE).</p> <p>(74) Anwalt: PIELKEN, Petra; Becker-Gundahl-Strasse 36, D-81479 München (DE).</p>	197 43 894.6	4. Oktober 1997 (04.10.97)	DE	198 31 609.7	14. Juli 1998 (14.07.98)	DE		<p>(81) Bestimmungsstaaten: AU, BR, CA, CN, HU, ID, JP, KR, MX, RU, SK, US, europäisches Patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).</p> <p><b>Veröffentlicht</b>  <i>Mit internationalem Recherchenbericht.</i></p> <p>(88) Veröffentlichungsdatum des internationalen Recherchenberichts: 20. Mai 1999 (20.05.99)</p>
197 43 894.6	4. Oktober 1997 (04.10.97)	DE						
198 31 609.7	14. Juli 1998 (14.07.98)	DE						

Die vorliegende Erfindung betrifft ein Verfahren zur mikrobiellen Herstellung von Aminosäuren der Aspartat- und/oder Glutamatfamilie, bei dem die Pyruvat-Carboxylase-Aktivität durch genetische Veränderung des Enzyms und/oder die Pyruvat-Carboxylase-Genexpression eines die entsprechende Aminosäure produzierenden Mikroorganismus erhöht wird. Des weiteren betrifft die vorliegende Erfindung ein Pyruvat-Carboxylase-Gen sowie weitere, im erfindungsgemäßen Verfahren einsetzbare Mittel.



# LEDIGLICH ZUR INFORMATION

Codes zur Identifizierung von PCT-Vertragsstaaten auf den Kopfbögen der Schriften, die internationale Anmeldungen gemäss dem PCT veröffentlichen.

AL	Albanien	ES	Spanien	LS	Lesotho	SI	Slowenien
AM	Armenien	FI	Finnland	LT	Litauen	SK	Slowakei
AT	Österreich	FR	Frankreich	LU	Luxemburg	SN	Senegal
AU	Australien	GA	Gabun	LV	Lettland	SZ	Swasiland
AZ	Aserbaidschan	GB	Vereinigtes Königreich	MC	Monaco	TD	Tschad
BA	Bosnien-Herzegowina	GE	Georgien	MD	Republik Moldau	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagaskar	TJ	Tadschikistan
BE	Belgien	GN	Guinea	MK	Die ehemalige jugoslawische Republik Mazedonien	TM	Turkmenistan
BF	Burkina Faso	GR	Griechenland	ML	Mali	TR	Türkei
BG	Bulgarien	HU	Ungarn	MN	Mongolei	TT	Trinidad und Tobago
BJ	Benin	IE	Irland	MR	Mauretanien	UA	Ukraine
BR	Brasilien	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Island	MX	Mexiko	US	Vereinigte Staaten von Amerika
CA	Kanada	IT	Italien	NE	Niger	UZ	Usbekistan
CF	Zentralafrikanische Republik	JP	Japan	NL	Niederlande	VN	Vietnam
CG	Kongo	KE	Kenia	NO	Norwegen	YU	Jugoslawien
CH	Schweiz	KG	Kirgisistan	NZ	Neuseeland	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Demokratische Volksrepublik Korea	PL	Polen		
CM	Kamerun	KR	Republik Korea	PT	Portugal		
CN	China	KZ	Kasachstan	RO	Rumänien		
CU	Kuba	LC	St. Lucia	RU	Russische Föderation		
CZ	Tschechische Republik	LI	Liechtenstein	SD	Sudan		
DE	Deutschland	LK	Sri Lanka	SE	Schweden		
DK	Dänemark	LR	Liberia	SG	Singapur		
EE	Estland						

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP 98/06210

## A. CLASSIFICATION OF SUBJECT MATTER

IPC<sup>6</sup>: C12P 13/20, C12N 15/60 // (C12P 13/20, C12R 1:15)

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC<sup>6</sup>: C12P, C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, PAJ, EPODOC, STRAND, BIOSIS, CA, MEDLINE, SCISEARCH

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	Microbiology, Vol. 144, 1998, Petra G. Peters-Wendisch et al, "Pyruvate carboxylase from <i>Corynebacterium glutamicum</i> : Characterization, expression and inactivation of the pyc gene", page 915 - page 927, see the whole article	1-37
P,X	EMBL, Databas Genbank/DBJ, Accession no. Y09548, Peters-Wendisch P.G. et al: "Pyruvate carboxylase from <i>Corynebacterium glutamicum</i> : Characterization, expression and inactivation of the pyc gene", & 11 February 1998, page 20-109, 165-3587	18-25
X	Appl Microbiol Biotechnol; Vol. 47, 1997; S.M. Park et al, "Elucidation of anaplerotic pathways in <i>Corynebacterium glutamicum</i> via 13C-NMR spectroscopy and GC-MS", page 430 - page 440, see the whole article, in particular page 431, column 2, lines 7-18	1-37



Further documents are listed in the continuation of Box C.



See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

17 February 1999 (17.02.99)

Date of mailing of the international search report

09 March 1999 (09.03.99)

Name and mailing address of the ISA/

EUROPEAN PATENT OFFICE

Facsimile No.

Authorized officer

Telephone No.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP 98/06210

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Microbiology, Vol. 143, 1997, Petra G. Peters-Wendisch et al, "Pyruvate Carboxylase as an Anaplerotic enzyme in Corynebacterium glutamic- um", page 1095 - page 1103, see the abstract and the discussion	1-37
A	Chemical Abstracts, Vol. 126, Nr 12, 24 March 1997 (24.03.97), (Columbus, Ohio, USA), Peters-Wendisch, Petra, "Anaplerotic reactions in Corynebacterium glutamicum. Studies of the significance of phosphoen- lpyruvate (PEP)-carboxylase and pyruvate-carboxylase in the central metabolism and in amino acid produc- tion", THE ABSTRACT Nr 154946, Ber. Forschungszent. july 1996, 1-121	1-37
A	Applied and Environmental Microbiology, Vol. 62, Nr 2, February 1996, Muriel Coccagn-Bousquet et al, "Growth Rate-Dependent Modulation of carbon Flux through Central Metabolism and the Kinetic Consequen- ces for Glucose-Limited Chemostat Cultures of Coryne- bacterium glutamicum", page 429 - page 436, see abstract; page 433, column 2, lines 6-32	1-37
A	EP 0723011 A1 (AJINOMOTO CO., INC.), 24 July 1996 (24.07.96), see abstract	1-37
A	Databas Pir, accession no. S73055, R. Smith et al: "Mycobacterium tuberculosis cosmid tbc2", EMBL Data Library, September 1994, a.a. 1-1144	18

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

02/02/99

International application No.  
**PCT/EP 98/06210**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0723011 A1	24/07/96	AU 682547 B	09/10/97
		AU 8099194 A	21/03/95
		BR 9407625 A	21/01/97
		PL 313119 A	10/06/96
		SK 20496 A	06/11/96
		CA 2169170 A	02/03/95
		CN 1133615 A	16/10/96
		CZ 9600524 A	12/06/96
		HU 73690 A	30/09/96
		HU 9600240 D	00/00/00
		JP 7111890 A	02/05/95
		WO 9506114 A	02/03/95
		JP 8070860 A	19/03/96
<hr/>			

## INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen

PCT/EP 98/06210

## A. KLASSIFIZIERUNG DES ANMELDUNGSGEGENSTANDES

IPC6: C12P 13/20, C12N 15/60 // (C12P 13/20, C12R 1:15)  
 Nach der Internationalen Patentklassifikation (IPK) oder nach der nationalen Klassifikation und der IPK

## B. RECHERCHIERTE GEBIETE

Recherchierter Mindestprüfstoff (Klassifikationssystem und Klassifikationssymbole)

IPC6: C12P, C12N

Recherte, aber nicht zum Mindestprüfstoff gehörende Veröffentlichungen, soweit diese unter die recherchierten Gebiete fallen

Während der internationalen Recherche konsultierte elektronische Datenbank (Name der Datenbank und evtl. verwendete Suchbegriffe)

WPI, PAJ, EPODOC, STRAND, BIOSIS, CA, MEDLINE, SCISEARCH

## C. ALS WESENTLICH ANGESEHENE UNTERLAGEN

Kategorie*	Bezeichnung der Veröffentlichung, soweit erforderlich unter Angabe der in Betracht kommenden Teile	Betr. Anspruch Nr.
P,X	Microbiology, Band 144, 1998, Petra G. Peters-Wendisch et al, "Pyruvate carboxylase from Corynebacterium glutamicum: characterization, expression and inactivation of the pyc gene", Seite 915 - Seite 927, Siehe den ganzen Artikel	1-37
P,X	EMBL, Databas Genbank/DBDJ, accession no. Y09548, Peters-Wendisch P.G. et al: "Pyruvate carboxylase from Corynebacterium glutamicum: characterization, expression and inactivation of the pyc gene", & 11 Feb 1998, nt 20-109, 165-3587	18-25

☒ Weitere Veröffentlichungen sind der Fortsetzung von Feld C zu entnehmen.

☒ Siehe Anhang Patentfamilie.

\* Besondere Kategorien von angegebenen Veröffentlichungen:

"A" Veröffentlichung, die den allgemeinen Stand der Technik definiert, aber nicht als besonders bedeutsam anzusehen ist

"E" älteres Dokument, das jedoch erst am oder nach dem internationalen Anmeldedatum veröffentlicht worden ist

"L" Veröffentlichung, die geeignet ist, einen Prioritätsanspruch zweifelhaft erscheinen zu lassen, durch die das Veröffentlichungsdatum einer anderen im Recherchenbericht genannten Veröffentlichung belegt werden soll oder die aus einem anderen besonderen Grund angegeben ist (wie ausgeführt)

"O" Veröffentlichung, die sich auf eine mündliche Offenbarung, eine Benutzung, eine Ausstellung oder andere Maßnahmen bezieht

"P" Veröffentlichung, die vor dem internationalen Anmeldedatum, aber nach dem beanspruchten Prioritätsdatum veröffentlicht worden ist

"T" Spätere Veröffentlichung, die nach dem internationalen Anmeldedatum oder dem Prioritätsdatum veröffentlicht worden ist und mit der Anmeldung nicht kollidiert, sondern nur zum Verständnis des der Erfindung zugrundeliegenden Prinzips oder der ihr zugrundeliegenden Theorie angegeben ist

"X" Veröffentlichung von besonderer Bedeutung: die beanspruchte Erfindung kann allein aufgrund dieser Veröffentlichung nicht als neu oder auf erfinderischer Tätigkeit beruhend betrachtet werden

"Y" Veröffentlichung von besonderer Bedeutung: die beanspruchte Erfindung kann nicht als auf erfinderischer Tätigkeit beruhend betrachtet werden, wenn die Veröffentlichung mit einer oder mehreren Veröffentlichungen dieser Kategorie in Verbindung gebracht wird und diese Verbindung für einen Fachman naheliegend ist

"&" Veröffentlichung, die Mitglied derselben Patentfamilie ist

Datum des Abschlusses der internationalen Recherche

17 Februar 1999

Absenddatum des internationalen Recherchenberichts

09.03.99

Name und Postanschrift der internationalen Recherchenbehörde

Europäisches Patentamt, P.B. 5818 Patentlaan 2  
 NL-2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
 Fax: (+31-70) 340-3016

Bevollmächtigter Bediensteter

HAMPUS RYSTEDT

## INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen

PCT/EP 98/06210

C (Fortsetzung). ALS WESENTLICH ANGESEHENE UNTERLAGEN		
Kategorie*	Bezeichnung der Veröffentlichung, soweit erforderlich unter Angabe der in Betracht kommenden Teile	Betr. Anspruch Nr.
X	Appl Microbiol Biotechnol, Band 47, 1997, S.M. Park et al, "Elucidation of anaplerotic pathways in Corynebacterium glutamicum via 13C-NMR spectroscopy and GC-MS", Seite 430 - Seite 440, Siehe den ganzen Artikel, besonders Seite 431, Spalte 2, Zeilen 7-18 --	1-37
A	Microbiology, Band 143, 1997, Petra G. Peters-Wendisch et al, "Pyruvate carboxylase as an anaplerotic enzyme in Corynebacterium glutamicum", Seite 1095 - Seite 1103, Siehe die Zusammenfassung und die Diskussion --	1-37
A	Chemical Abstracts, Band 126, Nr 12, 24 März 1997 (24.03.97), (Columbus, Ohio, USA), Peters-Wendisch, Petra, "Anaplerotic reactions in Corynebacterium glutamicum. Studies of the significance of phosphoenolpyruvate (PEP)-carboxylase and pyruvate-carboxylase in the central metabolism and in amino acid production", THE ABSTRACT Nr 154946, Ber. Forschungszent. Juelich 1996, 1-121 --	1-37
A	Applied and Environmental Microbiology, Band 62, Nr 2, Februar 1996, Muriel Coccagn-Bousquet et al, "Growth Rate-Dependent Modulation of Carbon Flux through Central Metabolism and the Kinetic Consequences for Glucose-Limited Chemostat Cultures of Corynebacterium glutamicum", Seite 429 - Seite 436, Siehe die Zusammenfassung; Seite 433, Spalte 2, Zeilen 6-32 --	1-37
A	EP 0723011 A1 (AJINOMOTO CO., INC.), 24 Juli 1996 (24.07.96), Siehe die Zusammenfassung --	1-37

## INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen

PCT/EP 98/06210

C (Fortsetzung). ALS WESENTLICH ANGESEHENE UNTERLAGEN

Kategorie*	Bezeichnung der Veröffentlichung, soweit erforderlich unter Angabe der in Betracht kommenden Teile	Betr. Anspruch Nr.
A	<p>Databas Pir, accession no. S73055, R. Smith et al: "Mycobacterium tuberculosis cosmid tbc2", EMBL Data Library, September 1994, a.a. 1-1144</p> <p style="text-align: center;">-- -----</p>	18

**INTERNATIONALER RECHERCHENBERICHT**  
Angaben zu Veröffentlichungen, die zur selben Patentfamilie gehören  
02/02/99

Internationales Aktenzeichen  
PCT/EP 98/06210

Im Recherchenbericht angefurtes Patendokument	Datum der Veröffentlichung	Mitglied(er) der Patentfamilie	Datum der Veröffentlichung
EP 0723011 A1	24/07/96	AU 682547 B	09/10/97
		AU 8099194 A	21/03/95
		BR 9407625 A	21/01/97
		PL 313119 A	10/06/96
		SK 20496 A	06/11/96
		CA 2169170 A	02/03/95
		CN 1133615 A	16/10/96
		CZ 9600524 A	12/06/96
		HU 73690 A	30/09/96
		HU 9600240 D	00/00/00
		JP 7111890 A	02/05/95
		WO 9506114 A	02/03/95
		JP 8070860 A	19/03/96
-----			